



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09 893,452	06 29 2001	Sunghoe Yoon	8733.463.00	6325

30827 7590 05 21 2003

MCKENNA LONG & ALDRIDGE LLP
1900 K STREET, NW
WASHINGTON, DC 20006

EXAMINER

NGO, HUYEN LE

ART UNIT

PAPER NUMBER

2871

DATE MAILED: 05/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/893,452

Applicant(s)

YOON, SUNGHOE

Examiner

Julie-Huyen L. Ngo

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 11-16 is/are allowed.
- 6) ☒ Claim(s) 1-10 and 17-21 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.

Attachments

- 1) ☐ Notice of References Cited (PTO-894)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____

- 4) ☐ Interview Summary (PTO-413) (App. No. ____)
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by MATSUTE (JP411084361).

MATSUTE teaches a reflective liquid crystal display comprising:

- upper and lower substrates (1 and 4) that are opposite to and are spaced apart from each other;
- a liquid crystal layer 9 interposed between the upper and lower substrates;
- a transparent common electrode 3 on the surface of the upper substrate opposite the lower substrate;
- a cholesteric liquid crystal (CLC) color filter 23 that selectively reflects and transmits light, the CLC color filter formed over the lower substrate;
- a transparent pixel electrode 5 on the CLC color filter; and a light absorption layer 24 between the CLC color filter and the lower substrate.

2. Claims 1-2 are rejected under 35 U.S.C. 102(b) as being anticipated by Narita et al. (US5555111A).

Narita et al. teaches a reflective liquid crystal display comprising

Art Unit: 2871

- upper and lower substrates (1 and 6) that are opposite to and are spaced apart from each other;
- a liquid crystal layer 7 interposed between the upper and lower substrates;
- a transparent common electrode 65 on the surface of the upper substrate opposite the lower substrate;
- a cholesteric liquid crystal (CLC) color filter 2 that selectively reflects and transmits light, the CLC color filter formed over the lower substrate;
- a transparent pixel electrode 4 on the CLC color filter; and a light absorption layer between the CLC color filter and the lower substrate (col. 9 lines 20-21).

wherein the upper and lower substrate are made of a transparent glass substrate.

3. Claim 17 is rejected under 35 U.S.C. 102(b) as being anticipated by Scheffer (US4032218).

Sheffer teaches (Fig.1a-b) a method of forming a lower substrate for use in a reflective liquid crystal display device comprising:

- preparing a light absorption layer as a substrate 8;
- forming a cholesteric liquid crystal (CLC) color filter 7 on the light absorption layer;
- forming a transparent pixel electrode 4 on the CLC color filter.

Art Unit: 2871

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 3-6 and 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over MATSUTE (JP411084361) as applied to claim 1 in view of Masyuki (JP362184055A).

Masayuki teaches forming a light absorption layer of polyamic acid with the black dye for good adhesion.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify a reflective liquid crystal display as MATSUTE disclosed with a light absorption layer formed of polyamic acid with the black dye for good adhesion.

5. Claims 18-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scheffer (US4032218) as applied to claim 17 in view of Masyuki (JP362184055A).

Masayuki teaches forming a light absorption layer of polyamic acid with the black dye for good adhesion.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify a reflective liquid crystal display as

Art Unit: 2871

MATSUTE disclosed with the light absorption layer formed of polyamic acid with the black dye for good adhesion.

Allowable Subject Matter

Claims 11-16 are allowed.

The following is an examiner's statement of reasons for allowance:

Claim 11 is allowed since there is no prior art teaches a method of forming a lower substrate for use in a reflective liquid crystal display device comprising:

- rubbing the light absorption layer in one direction;
- forming a cholesteric liquid crystal (CLC) color filter on the light absorption layer.

Claims 12-16 are allowed since they depend on the allowed claim.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

SAKAKAWA et al. (JP410282324A) disclose a REFLECTIVE COLOR FILTER with the light absorbing layer 2 formed into a light absorbing layer 2' with a recess in a preset shape (a rib shape). A preset amount of ultraviolet hardening cholesteric liquid

Art Unit: 2871

crystal or chiral nematic liquid crystal is dropped on the light absorbing layer 2' and embedded in the recess.

FUJIWARA et al. (EP478299A2) disclose a liquid crystal display element of optical writing type, including: a first transparent substrate (21a); a first transparent electrode layer (22a) formed on the first transparent substrate; a photoconductive layer (23) formed on the first transparent electrode layer; a light absorbing layer (24) formed on the photoconductive layer; a light reflecting layer (25) formed on the light absorbing layer and composed of a macro molecular film of cholesteric liquid crystal; a second transparent substrate (21b); a second transparent electrode layer (22b) formed on the second transparent substrate; and a liquid crystal layer (26) disposed between the second transparent electrode layer and the light reflecting layer.

Faris (US5457554A) discloses a substrate having an image layer, which consists of a carrier material having a plurality of CLC flakes, laminate or platelets disposed therein.

Contact Information

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Julie-Huyen L. Ngo whose telephone number is (703) 305-3508. The Examiner can normally be reached on T-Friday.


If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's Supervisor, Mr. Robert H. Kim can be reached at (703) 305-3492. The fax phone numbers for the organization where this application or proceeding is assigned are (703)

Art Unit: 2871

746-4709 for regular communications and (703) 746-4709 for After Final communications. Please contact the Examiner before faxing any paper to the Office.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

May 2, 2003



Julie-Huyen L. Ngo
Patent Examiner
Art Unit 2871